

SEQUENCE LISTING

#4

<110> FISCHER, Rainer
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NAHRING, Jorg
SACK, Markus
MONECKE, Michael
LIAO, Yu-Cai
SPIEGEL, Holger
ZIMMERMAN, Sabine
EMANS, Neil



<120> Molecular Pathogenicide Mediated Plant Disease
Resistance

<130> 0147-0189P

<140> 09/419,788

<141> 1999-10-18

<150> 98 11 9630.6 EP

<151> 1998-10-16

<150> 66/BOM/1998 INDIA

<151> 1998-10-16

<160> 163

<170> PatentIn Ver. 2.1

<210> 1

<211> 33

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 1

gccgtcgacg aggacctgaa caaggtgttc cca

33

<210> 2

<211> 28

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 2

gcctctagat cagaaatcct ttctcttg

28

<210> 3

<211> 1378

<212> DNA

<213> Artificial Sequence

INS
C18

<220>

<223> Description of Artificial Sequence: synthetic, no
natural origin

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aattgttctc acccagttct cagcaatcat gtctgcatct ccaggggaga aggtcaccat 180
gacctgcagt gccagttcaa gtgtaagtaa aatgcaatgg tatcagcaga agtcaggcac 240
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<210> 4

<211> 17

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 4

gttttcccag tcacgac

17

<210> 5

<211> 130

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 5

ggctctagac gctcgagttt aaaacctata atacacatag atgttgcaat aaagcaaaat 60
cagtatacaa atagtccacc agaaatactc cctatacttc ttagcggccg cagaacctcc 120
acctccgtcg 130

<210> 6

<211> 148

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 6

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ggctctagac gctcgagttt agaaatgcct agatctctta atcaagatga agagcatcaa 60
gcaaattccg agcagcgtg ccaagaaagt caccaagagc aaagttcttc ccaatctcct 120
agcggccgca gaacctccac ctccgtcg                                     148
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<210> 7

<211> 145

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 7

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ggctctagac gctcgagttt aatcctctgc catgtagagt ctatacatga gagcaaccac 60
gagtgtgat atcgctggga tcacccaatt ggtccaccat gaagagttag actcaacagc 120
ggccgcagaa cctccacctc cgtcg                                     145
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<210> 8

<211> 130

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 8

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ggctctagac gctcgagttt aagtgaagaa ataaataaca ataacaacaa caataatagc 60
acaaatagca ccaagcataa tcatcatctt acaattcttc caagcggccg cagaacctcc 120
acctccgtcg                                     130
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<210> 9

<211> 17

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 9

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gttttcccag tcacgac                                     17
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<210> 10

<211> 35

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 10
ggctctagac gctcgagttt agaaatgcct agatc

35

<210> 11
<211> 51
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 11
ggctctagac gctcgagttt aagtgaagaa ataaataaca ataacaacaa c

51

<210> 12
<211> 900
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 12
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acctgcagtg ccagttcaag tgtaagtaaa atgcaatggg atcagcagaa gtcaggcacc 180
tcccccaaaa gatggattta tgacacatcc aaactggcct ctggagtccc tggtcgcttc 240
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aagctggaga taaaaggctc tactagtggg tccgggaaga gctctgaagg taaagggtgag 420
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tgcaaggcct ctggatacac attcattacc tatgttatgc actgggtgaa gcagaagcct 540
gggcagggcc ttgagtggat tggatatatt aatcctaaca aagacggtac aaagttcaat 600
gagaagttca aaggcaaggc cacactgact tcagacaaat cctccaacac agcctacatg 660
gagctcagca gcctgacctc tgaggactct gcggtctatt actgtgcaag agactatgat 720
tacgactggg ttgcttactg gggccagggg actctgggtca ctgtctctgc agtcgacgga 780
ggtggagggt ctgcggccgc taagaagtat agggagtatt tcttgtggac tatttgtata 840
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<210> 13
<211> 918
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 13
gaattcacaa cacaaatcag atttatagag agatttataa aaaaaaaaaa acatatgcaa 60
attgttctca cccagtctcc agcaatcatg tctgcatctc caggggagaa ggtcaccatg 120
acctgcagtg ccagttcaag tgtaagtaaa atgcaatggg atcagcagaa gtcaggcacc 180
tcccccaaaa gatggattta tgacacatcc aaactggcct ctggagtccc tggtcgcttc 240

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agtggcagtg ggtctgggac ctcttactct ctcacaatca gcagcatgga ggctgaagat 300
gctgccactt attactgcca gcagtggagt agtaaccgcg tcacgttcgg tgctgggacc 360
aagctggaga taaaaggctc tactagtggg tccgggaaga gctctgaagg taaagggtgag 420
gtccagctgc agcagtctgg acctgagctg gtaaattcctg gggcttcagt gaagatgtcc 480
tgcaaggcct ctggatacac attcattacc tatgttatgc actgggtgaa gcagaagcct 540
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gagaagttca aaggcaaggc cactactgact tcagacaaat cctccaacac agcctacatg 660
gagctcagca gcctgacctc tgaggactct gcggtctatt actgtgcaag agactatgat 720
tacgactggg ttgcttactg gggccagggg actctgggtc ctgtctctgc agtcgacgga 780
ggtggagggt ctgcggccgc taggagattg ggaagaactt tgctcttggt gactttcttg 840
gcagcgtgc tcggaatttg cttgatgctc ttcattctga ttaagagatc taggcatttc 900
taaactcgag cgtctaga
918

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<210> 14

<211> 915

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic, no natural origin

<400> 14

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gaattcacia cacaatcag atttatagag agatttataa aaaaaaaaaa acatatgcaa 60
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acctgcagtg ccagttcaag tgtaagtaaa atgcaatggg atcagcagaa gtcaggcacc 180
tccccaaaaa gatggattta tgacacatcc aaactggcct ctggagtccc tggctcgcttc 240
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gctgccactt attactgcca gcagtggagt agtaaccgcg tcacgttcgg tgctgggacc 360
aagctggaga taaaaggctc tactagtggg tccgggaaga gctctgaagg taaagggtgag 420
gtccagctgc agcagtctgg acctgagctg gtaaattcctg gggcttcagt gaagatgtcc 480
tgcaaggcct ctggatacac attcattacc tatgttatgc actgggtgaa gcagaagcct 540
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gagaagttca aaggcaaggc cactactgact tcagacaaat cctccaacac agcctacatg 660
gagctcagca gcctgacctc tgaggactct gcggtctatt actgtgcaag agactatgat 720
tacgactggg ttgcttactg gggccagggg actctgggtc ctgtctctgc agtcgacgga 780
ggtggagggt ctgcggccgc tggtgagctc aactcttcat ggtggaccaa ttgggtgatc 840
ccagcgatat cagcactcgt ggttgctctc atgtatagac tctacatggc agaggattaa 900
actcgagcgt ctaga
915

```

<210> 15

<211> 900

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic, no natural origin

<400> 15

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gaattcacia cacaatcag atttatagag agatttataa aaaaaaaaaa acatatgcaa 60
attgttctca cccagtctcc agcaatcatg tctgcatctc caggggagaa ggtcaccatg 120
acctgcagtg ccagttcaag tgtaagtaaa atgcaatggg atcagcagaa gtcaggcacc 180
tccccaaaaa gatggattta tgacacatcc aaactggcct ctggagtccc tggctcgcttc 240
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gctgccactt attactgcca gcagtggagt agtaaccgcg tcacgttcgg tgctgggacc 360
aagctggaga taaaaggctc tactagtggg tccgggaaga gctctgaagg taaagggtgag 420
gtccagctgc agcagtctgg acctgagctg gtaaattcctg gggcttcagt gaagatgtcc 480
tgcaaggcct ctggatacac attcattacc tatgttatgc actgggtgaa gcagaagcct 540

```

gggcagggcc ttgagtggat tggatatatt aatcctaaca aagacggtac aaagttcaat 600
gagaagttca aaggcaaggc cacactgact tcagacaaat cctccaacac agcctacatg 660
gagctcagca gcctgacctc tgaggactct gcggtctatt actgtgcaag agactatgat 720
tacgactggg ttgcttactg gggccagggg actctgggtca ctgtctctgc agtcgacgga 780
ggtggagggt ctgcggccgc ttggaagaat tgtaagatga tgattatgct tgggtgctatt 840
tgtgctatta ttgttggtgt tattgttatt tatttcttca cttaaactcg agcgtctaga 900

<210> 16

<211> 45

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 16

gcggaattcg acgtcgccat ggccttcctc ggcgacggcg gcgac 45

<210> 17

<211> 37

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 17

gcgaagcttg tcgaccggcg gtttgccggg ctggctg 37

<210> 18

<211> 1604

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 18

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aattgttctc acccagtcctc cagcaatcat gtctgcatct ccaggggaga aggtcaccat 180
gacctgcagt gccagttcaa gtgtaagtaa aatgcaatgg tatcagcaga agtcaggcac 240
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tgggcagggc cttgagtggg ttggatatat taatcctaac aaagacggta caaagttcaa 660
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ggtggagcgg ctgctccagg cgcaccgcca actggaggag cgcggctatg tgttcgtcgg 1020

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ctaccacggc accttctctg aagcggcgca aagcatcgtc ttccggcggg tgcgcgcgcg 1080
cagccaggac ctcgacgcga tctggcgcg tttctatata gccggcgatc cggcgctggc 1140
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cggcggcgac ctcgacctgt ccagcatccc cgacaaggaa caggcgatca gcgcctgcc 1500
ggactacgcc agccagcccg gcaaaccgcc ggtcgacgga ggtggagggt ctaagcacat 1560
caaggactgg gagcacctcg aagagttcta aactcgatc taga 1604

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<210> 19

<211> 1060

<212> PRT

<213> Artificial Sequence

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<223> Description of Artificial Sequence: synthetic, no natural origin

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Met Gln Ile Val Leu Thr Gln Ser Pro Ala Ile Met Ser Ala Ser Pro
  1             5             10             15

```

```

Gly Glu Lys Val Thr Met Thr Cys Ser Ala Ser Ser Ser Val Ser Lys
      20             25             30

```

```

Met Gln Trp Tyr Gln Gln Lys Ser Gly Thr Ser Pro Lys Arg Trp Ile
      35             40             45

```

```

Tyr Asp Thr Ser Lys Leu Ala Ser Gly Val Pro Gly Arg Phe Ser Gly
      50             55             60

```

```

Ser Gly Ser Gly Thr Ser Tyr Ser Leu Thr Ile Ser Ser Met Glu Ala
      65             70             75             80

```

```

Glu Asp Ala Ala Thr Tyr Tyr Cys Gln Gln Trp Ser Ser Asn Pro Leu
      85             90             95

```

```

Thr Phe Gly Ala Gly Thr Lys Leu Glu Ile Lys Gly Ser Thr Ser Gly
      100            105            110

```

```

Ser Gly Lys Ser Ser Glu Gly Lys Gly Glu Val Gln Leu Gln Gln Ser
      115            120            125

```

```

Gly Pro Glu Leu Val Asn Pro Gly Ala Ser Val Lys Met Ser Cys Lys
      130            135            140

```

```

Ala Ser Gly Tyr Thr Phe Ile Thr Tyr Val Met His Trp Val Lys Gln
      145            150            155            160

```

```

Lys Pro Gly Gln Gly Leu Glu Trp Ile Gly Tyr Ile Asn Pro Asn Lys
      165            170            175

```

```

Asp Gly Thr Lys Phe Asn Glu Lys Phe Lys Gly Lys Ala Thr Leu Thr
      180            185            190

```

```

Ser Asp Lys Ser Ser Asn Thr Ala Tyr Met Glu Leu Ser Ser Leu Thr
      195            200            205

```

```

Ser Glu Asp Ser Ala Val Tyr Tyr Cys Ala Arg Asp Tyr Asp Tyr Asp

```

210	215	220
Trp Phe Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ala Val 225 230 235 240		
Asp Gly Gly Gly Ser Met Lys Arg Met Leu Ile Asn Ala Thr Gln Gln 245 250 255		
Glu Glu Leu Arg Val Ala Leu Val Asp Gly Gln Arg Leu Tyr Asp Leu 260 265 270		
Asp Ile Glu Ser Pro Gly His Glu Gln Lys Lys Ala Asn Ile Tyr Lys 275 280 285		
Gly Lys Ile Thr Arg Ile Glu Pro Ser Leu Glu Ala Ala Phe Val Asp 290 295 300		
Tyr Gly Ala Glu Arg His Gly Phe Leu Pro Leu Lys Glu Ile Ala Arg 305 310 315 320		
Glu Tyr Phe Pro Ala Asn Tyr Ser Ala His Gly Arg Pro Asn Ile Lys 325 330 335		
Asp Val Leu Arg Glu Gly Gln Glu Val Ile Val Gln Ile Asp Lys Glu 340 345 350		
Glu Arg Gly Asn Lys Gly Ala Ala Leu Thr Thr Phe Ile Ser Leu Ala 355 360 365		
Gly Ser Tyr Leu Val Leu Met Pro Asn Asn Pro Arg Ala Gly Gly Ile 370 375 380		
Ser Arg Arg Ile Glu Gly Asp Asp Arg Thr Glu Leu Lys Glu Ala Leu 385 390 395 400		
Ala Ser Leu Glu Leu Pro Glu Gly Met Gly Leu Ile Val Arg Thr Ala 405 410 415		
Gly Val Gly Lys Ser Ala Glu Ala Leu Gln Trp Asp Leu Ser Phe Arg 420 425 430		
Leu Lys His Trp Glu Ala Ile Lys Lys Ala Ala Glu Ser Arg Pro Ala 435 440 445		
Pro Phe Leu Ile His Gln Glu Ser Asn Val Ile Val Arg Ala Phe Arg 450 455 460		
Asp Tyr Leu Arg Gln Asp Ile Gly Glu Ile Leu Ile Asp Asn Pro Lys 465 470 475 480		
Val Leu Glu Leu Ala Arg Gln His Ile Ala Ala Leu Gly Arg Pro Asp 485 490 495		
Phe Ser Ser Lys Ile Lys Leu Tyr Thr Gly Glu Ile Pro Leu Phe Ser 500 505 510		
His Tyr Gln Ile Glu Ser Gln Ile Glu Ser Ala Phe Gln Arg Glu Val 515 520 525		
Arg Leu Pro Ser Gly Gly Ser Ile Val Ile Asp Ser Thr Glu Ala Leu 530 535 540		

Thr Ala Ile Asp Ile Asn Ser Ala Arg Ala Thr Arg Gly Gly Asp Ile		
545	550	555 560
Glu Glu Thr Ala Phe Asn Thr Asn Leu Glu Ala Ala Asp Glu Ile Ala		
	565	570 575
Arg Gln Leu Arg Leu Arg Asp Leu Gly Gly Leu Ile Val Ile Asp Phe		
	580	585 590
Ile Asp Met Thr Pro Val Arg His Gln Arg Ala Val Glu Asn Arg Leu		
	595	600 605
Arg Glu Ala Val Arg Gln Asp Arg Ala Arg Ile Gln Ile Ser His Ile		
	610	615 620
Ser Arg Phe Gly Leu Leu Glu Met Ser Arg His Arg Leu Ser Pro Ser		
	625	630 635 640
Leu Gly Glu Ser Ser His His Val Cys Pro Arg Cys Ser Gly Thr Gly		
	645	650 655
Thr Val Arg Asp Asn Glu Ser Leu Ser Leu Ser Ile Leu Arg Leu Ile		
	660	665 670
Glu Glu Glu Ala Leu Lys Glu Asn Thr Gln Glu Val His Ala Ile Val		
	675	680 685
Pro Val Pro Ile Ala Ser Tyr Leu Leu Asn Glu Lys Arg Ser Ala Val		
	690	695 700
Asn Ala Ile Glu Thr Arg Gln Asp Gly Val Arg Cys Val Ile Val Pro		
	705	710 715 720
Asn Asp Gln Met Glu Thr Pro His Tyr His Val Val Arg Val Arg Lys		
	725	730 735
Gly Glu Glu Thr Pro Thr Leu Ser Tyr Met Leu Pro Lys Leu His Glu		
	740	745 750
Glu Ala Met Ala Leu Pro Ser Glu Glu Glu Phe Ala Glu Arg Lys Arg		
	755	760 765
Pro Glu Gln Pro Ala Leu Ala Thr Phe Ala Met Pro Asp Val Pro Pro		
	770	775 780
Ala Pro Thr Pro Ala Glu Pro Ala Ala Pro Val Val Ala Pro Ala Pro		
	785	790 795 800
Lys Ala Ala Pro Ala Thr Pro Ala Ala Pro Ala Gln Pro Gly Leu Leu		
	805	810 815
Ser Arg Phe Phe Gly Ala Leu Lys Ala Leu Phe Ser Gly Gly Glu Glu		
	820	825 830
Thr Lys Pro Thr Glu Gln Pro Ala Pro Lys Ala Glu Ala Lys Pro Glu		
	835	840 845
Arg Gln Gln Asp Arg Arg Lys Pro Arg Gln Asn Asn Arg Arg Asp Arg		
	850	855 860

Asn Glu Arg Arg Asp Thr Arg Ser Glu Arg Thr Glu Gly Ser Asp Asn
 865 870 875 880
 Arg Glu Glu Asn Arg Arg Asn Arg Arg Gln Ala Gln Gln Gln Thr Ala
 885 890 895
 Glu Thr Arg Glu Ser Arg Gln Gln Ala Glu Val Thr Glu Lys Ala Arg
 900 905 910
 Thr Ala Asp Glu Gln Gln Ala Pro Arg Arg Glu Arg Ser Arg Arg Arg
 915 920 925
 Asn Asp Asp Lys Arg Gln Ala Gln Gln Glu Ala Lys Ala Leu Asn Val
 930 935 940
 Glu Glu Gln Ser Val Gln Glu Thr Glu Gln Glu Glu Arg Val Arg Pro
 945 950 955 960
 Val Gln Pro Arg Arg Lys Gln Arg Gln Leu Asn Gln Lys Val Arg Tyr
 965 970 975
 Glu Gln Ser Val Ala Glu Glu Ala Val Val Ala Pro Val Val Glu Glu
 980 985 990
 Thr Val Ala Ala Glu Pro Ile Val Gln Glu Ala Pro Ala Pro Arg Thr
 995 1000 1005
 Glu Leu Val Lys Val Pro Leu Pro Val Val Ala Gln Thr Ala Pro Glu
 1010 1015 1020
 Gln Gln Glu Glu Asn Asn Ala Asp Asn Arg Asp Asn Gly Gly Met Pro
 1025 1030 1035 1040
 Ser Phe Ser Pro Leu Ala Ser Ser Pro Ala Arg Lys Trp Ser Ala Ser
 1045 1050 1055
 Ser Ser Leu Ser
 1060

<210> 20
 <211> 26
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: synthetic, no
 natural origin

<400> 20
 actgcgccat ggcttacagt atcact

26

<210> 21
 <211> 72
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: synthetic, no
 natural origin

<400> 21
 ccgtcagacg tcagaacctc cacctccact tccgcgcct ccagttgcag gaccagaggt 60
 ccaaaccaaa cc 72

<210> 22
 <211> 71
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: synthetic, no
 natural origin

<400> 22
 ctaccctcag agtttagtga tggatgatgg gatgagcggc cgcgtcgact gcagagacag 60
 tgaccagagt c 71

<210> 23
 <211> 88
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: synthetic, no
 natural origin

<400> 23
 ccctcactcg agtttagagc tcactcttct cagatccacg agcggccgca gaacctccac 60
 ctccgtcgac tgcagagaca gtgaccag 88

<210> 24
 <211> 1561
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: synthetic, no
 natural origin

<400> 24
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 ccagcaatca tgtctgcac tccaggggag aaggtcacca tgacctgcag tgccagttca 660
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acattcatta	cctatgttat	gcactgggtg	aagcagaagc	ctgggcaggg	ccttgagtgg	1080
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<210> 25

<211> 1582

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic, no natural origin

<400> 25

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gcgtggggccg	acccaataga	gttaattaat	ttatgtacta	atgccttagg	aaatcagttt	180
caaacacaac	aagctcgaac	tgtcgttcaa	agacaattca	gtgaggtgtg	gaaaccttca	240
ccacaagtaa	ctgttaggtt	ccctgacagt	gactttaagg	tgtacaggta	caatgcggta	300
ttagacccgc	tagtcacagc	actgttaggt	gcattcgaca	ctagaaatag	aataatagaa	360
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gacgcaacgg	tggccataag	gagcgcgata	aataatttaa	tagtagaatt	gatcagagga	480
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atccgcaggc	acgtaataaaa	gcgaggggtt	cgaatccccc	cgttaccccc	ggtagggggcc	1560
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<210> 26

<211> 1059

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic, no natural origin

<400> 26

gaattcgtat	ttttacaaca	attaccaaca	acaacaacaa	caacaacatt	acaattacta	60
tttacaagga	ccatggccca	aattgttctc	acccagtctc	cagcaatcat	gtctgcatct	120
ccaggggaga	aggtcacccat	gacctgcagt	gccagttcaa	gtgtaagtaa	aatgcaatgg	180
tatcagcaga	agtcaggcac	ctcccccaaa	agatggattt	atgacacatc	caaactggcc	240
tctggagtc	ctggtcgctt	cagtggcagt	gggtctggga	cctcttactc	tctcacaatc	300
agcagcatgg	aggctgaaga	tgtgccact	tattactgcc	agcagtggag	tagtaacccg	360
ctcacgttcg	gtgctgggac	caagctggag	ataaaaaggct	ctactagtgg	ttccgggaag	420
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catagtgttt	ttccctccac	ttaaatcgaa	gggttgtgtc	ttggatcgcg	cgggtcaaat	960
gtatatgggt	catatacatc	cgcaggcacg	taataaagcg	aggggttcga	atccccccgt	1020
tacccccggt	aggggcccag	gtaccggcgc	gcctctaga			1059

<210> 27
 <211> 1077
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: synthetic, no natural origin

<400> 27	
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ggagtcacctg	gtcgcttcag
agcatggagg	ctgaagatgc
acgttcgggtg	ctgggaccaa
tctgaaggta	aagggtgaggt
gcttcagtga	agatgtcctg
tgggtgaagc	agaagcctgg
gacggtacaa	agttcaatga
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tgtgcaagag	actatgatta
gtctctgcag	tcgacggagg
ctctagctcg	aggggtagtc
gtggtgcgta	cgataacgca
ggatcgcgcg	ggtcaaatgt
gggttcgaat	ccccccgtta
attaccaaca	acaacaacaa
caatcatgtc	taagtaaaat
agttcaagtg	tggttttatg
ctgcagtgcc	ccccaaaaga
ctgagctgag	tggttttatg
tgccacttat	tactgccagc
gctggagata	aaaggctcta
ccagctgcag	cagtctggac
caaggcctct	ggatacacat
gcagggcctt	gagtggtattg
gaagttcaaaa	ggcaaggcca
gctcagcagc	ctgacctctg
cgactggttt	gcttactggg
tgagggttct	gcggccgctc
aagatgcata	ataaataacg
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atatggttca	tatacatccg
gggcccaggt	accggcgcg
acaattacta	60
tgcattctcca	120
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cacaatcagc	300
taacccgctc	360
cggaagagc	420
aaatcctggg	480
tggtatgcac	540
tcctaacaaa	600
agacaaatcc	660
ggtctattac	720
tctgggtcact	780
gaaagatgag	840
gtaatcacac	900
gttggtgtctt	960
ataaagcgag	1020
ctctaga	1077

<210> 28
 <211> 1654
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: synthetic, no natural origin

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ccggtagggg ccaggtacc ggcgcgcctc taga 1654

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<210> 29

<211> 259

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic, no natural origin

<400> 29

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Glu Val His Cys Lys Gln Ser Gly Ala Glu Leu Val Lys Pro Gly Ala
  1                      5                      10                      15

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Ser Val Lys Leu Ser Cys Arg Ala Ser Asp Tyr Thr Phe Thr Ser Tyr
      20                      25                      30

```

```

Tyr Met Tyr Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile
      35                      40                      45

```

```

Gly Glu Ile Lys Pro Ser Gly Asn Gly Thr Asn Phe Asn Glu Lys Phe
      50                      55                      60

```

```

Lys Ser Lys Ala Thr Leu Thr Ser Asp Tyr Ser Ser Ser Thr Ala Tyr
      65                      70                      75                      80

```

```

Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Tyr Cys
      85                      90                      95

```

```

Thr Arg Ser Gly Asn Ala Met Asp Tyr Trp Gly Gln Gly Thr Thr Val
      100                      105                      110

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```

Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly

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115

120

125

Gly Gly Ser Asp Ile Val Leu Thr Leu Ser Pro Ala Thr Leu Ser Val
130 135 140

Thr Pro Gly Asp Arg Val Ser Leu Ser Cys Arg Ala Ser Gln Ser Ile
145 150 155 160

Ser Asn Phe Leu His Trp Tyr Gln Gln Lys Ser His Glu Ser Pro Arg
165 170 175

Leu Leu Ile Lys Tyr Thr Ser Gln Ser Ile Ser Gly Ile Pro Ser Thr
180 185 190

Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Ser Ile Asn Ser
195 200 205

Val Asp Thr Glu Asp Phe Gly Met Tyr Phe Cys Gln Gln Ser Asn Ser
210 215 220

Trp Pro His Arg Phe Gly Ser Gly Ile Lys Leu Glu Leu Lys Ser Ala
225 230 235 240

Val Asp Ala Ala Ala Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu Asn
245 250 255

Gly Ala Ala

<210> 30

<211> 267

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 30

Glu Val Lys Leu Gln Gln Ser Gly Ala Glu Leu Val Lys Pro Gly Ala
1 5 10 15

Ser Val Lys Ile Ser Cys Lys Ala Ser Asp Tyr Ser Phe Thr Gly Tyr
20 25 30

Asn Met Asn Trp Val Lys Gln Ser His Gly Lys Ser Leu Glu Trp Ile
35 40 45

Gly Asn Ile Asn Pro Tyr Tyr Gly Ser Thr Ser Tyr Asn Gln Lys Phe
50 55 60

Lys Gly Lys Ala Thr Leu Thr Val Asp Lys Ser Ser Ser Thr Ala Tyr
65 70 75 80

Met Gln Leu Asn Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Tyr Cys
85 90 95

Ala Val Gly Gly Asn Tyr Val Asp Trp Phe Ala Tyr Trp Gly Gln Gly
100 105 110

Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly
 115 120 125
 Ser Gly Gly Gly Gly Ser Asp Ile Leu Leu Thr Gln Ser Pro Leu Ser
 130 135 140
 Leu Pro Val Ser Leu Gly Asp His Ala Ser Ile Ser Cys Arg Ser Ser
 145 150 155 160
 Gln Ser Leu Val His Ser Asn Gly Asn Thr Tyr Leu His Trp Tyr Leu
 165 170 175
 Gln Asn Pro Gly Gln Ser Pro Lys Leu Leu Ile Tyr Lys Val Ser Asn
 180 185 190
 Arg Phe Ser Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr
 195 200 205
 Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Leu Gly Val
 210 215 220
 Tyr Phe Cys Ser Gln Ser Thr His Val Pro Tyr Thr Phe Gly Gly Gly
 225 230 235 240
 Thr Lys Leu Glu Leu Lys Arg Ala Val Asp Ala Ala Ala Glu Gln Lys
 245 250 255
 Leu Ile Ser Glu Glu Asp Leu Asn Gly Ala Ala
 260 265

<210> 31
 <211> 33
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: synthetic, no
 natural origin

<400> 31
 catgccatga ctcgcggccc agccggccat ggc

33

<210> 32
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: synthetic, no
 natural origin

<400> 32
 gaktgtrcagc ttcaggagtc rgga

24

<210> 33
 <211> 34

<212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: synthetic, no
 natural origin

 <400> 33
 catgccatga ctcgcggccc agccggccat ggcc 34

 <210> 34
 <211> 23
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: synthetic, no
 natural origin

 <400> 34
 caggtgmagc tgawggartc tgg 23

 <210> 35
 <211> 34
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: synthetic, no
 natural origin

 <400> 35
 catgccatga ctcgcggccc agccggccat ggcc 34

 <210> 36
 <211> 26
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: synthetic, no
 natural origin

 <400> 36
 gaggtccagc trcarcartc tggacc 26

 <210> 37
 <211> 34
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: synthetic, no
 natural origin

 <400> 37
 catgccatga ctcgcggccc agccggccat ggcc 34

<210> 38
<211> 34
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 38
catgccatga ctcgcggccc agccggccat ggcc 34

<210> 39
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 39
catgccatga ctcgcggccc agccggccat ggc 33

<210> 40
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 40
saggtccarc tgcagsaryc tggr 24

<210> 41
<211> 34
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 41
catgccatga ctcgcggccc agccggccat ggcc 34

<210> 42
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic, no

natural origin

<400> 42
gaggttcagc tgcagcagtc tggg 24

<210> 43
<211> 34
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 43
catgccatga ctcgcggccc agccggccat ggcc 34

<210> 44
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 44
gargtgaagc tgggtggartc tggr 24

<210> 45
<211> 34
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 45
catgccatga ctcgcggccc agccggccat ggcc 34

<210> 46
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 46
gaggtgaags tymtcgagtc tgga 24

<210> 47
<211> 34
<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic, no natural origin

<400> 47

catgccatga ctcgcggccc agccggccat ggcc

34

<210> 48

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic, no natural origin

<400> 48

gargtgaagc tkgakgagwc tgr

23

<210> 49

<211> 34

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic, no natural origin

<400> 49

catgccatga ctcgcggccc agccggccat ggcc

34

<210> 50

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic, no natural origin

<400> 50

gavgtgmwgc tkgtggagtc tggk

24

<210> 51

<211> 34

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic, no natural origin

<400> 51

catgccatga ctcgcggccc agccggccat ggcc

34

<210> 52
<211> 25
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 52
gaggtgcarc tkgttgagtc tgggtg

25

<210> 53
<211> 34
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 53
catgccatga ctcgcggccc agccggccat ggcc

34

<210> 54
<211> 24
<212> DNA
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<220>

<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 54
saggtycagc tkcagcagtc tgga

24

<210> 55
<211> 34
<212> DNA
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<220>

<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 55
catgccatga ctcgcggccc agccggccat ggcc

34

<210> 56
<211> 24
<212> DNA
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<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 56
cagatccagt tggtagcagtc tgga

24

<210> 57
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<212> DNA
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<220>
<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 57
catgccatga ctgcggccc agccggccat ggcc

34

<210> 58
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 58
caggtscacs tgrwgsagtc tggg

24

<210> 59
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 59
caggtscacs tgrwgsagtc tggg

24

<210> 60
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 60
caggttactc traaagwgts tggcc

25

<210> 61
<211> 34
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 61

catgccatga ctcgcggccc agccggccat ggcc

34

<210> 62

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 62

gatgtgaact tggaagtgtc tgg

23

<210> 63

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 63

catgccatga ctcgcggcgc gcct

24

<210> 64

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 64

gacattgtgm tgwhcagtc tcca

24

<210> 65

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 65

catgccatga ctcgcggcgc gcct

24

<210> 66
<211> 23
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 66
gacattcaga tgattcagtc tcc

23

<210> 67
<211> 24
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 67
catgccatga ctcgcggcgc gcct

24

<210> 68
<211> 23
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 68
gacattgttc tcwhccagtc tcc

23

<210> 69
<211> 24
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 69
catgccatga ctcgcggcgc gcct

24

<210> 70
<211> 24
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 70
gacattgtgm tgwchcagtc tcaa

24

<210> 71
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 71
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24

<210> 72
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 72
gatrttktga tgacccarrc kgca

24

<210> 73
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 73
catgccatga ctcgcggcgc gcct

24

<210> 74
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 74
gatrttktga tgacccarrc kcca

24

<210> 75
<211> 24
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 75

catgccatga ctcgcggcgc gcct

24

<210> 76

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 76

gacattgtga tgacccarbh tg

22

<210> 77

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 77

catgccatga ctcgcggcgc gcct

24

<210> 78

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 78

gatattktga tgacccaray tcc

23

<210> 79

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 79

catgccatga ctcgcggcgc gcct

24

<210> 80

<211> 24
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: synthetic, no
 natural origin

 <400> 80
 ramattgtgm tgacccaaty tccw 24

 <210> 81
 <211> 24
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: synthetic, no
 natural origin

 <400> 81
 catgccatga ctcgcggcgc gcct 24

 <210> 82
 <211> 24
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: synthetic, no
 natural origin

 <400> 82
 saaawtgk c tsacccagtc tcca 24

 <210> 83
 <211> 24
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: synthetic, no
 natural origin

 <400> 83
 catgccatga ctcgcggcgc gcct 24

 <210> 84
 <211> 23
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: synthetic, no
 natural origin

 <400> 84

gayatycaga tgacmcagwc tac

23

<210> 85

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 85

catgccatga ctcgcggcgc gcct

24

<210> 86

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 86

gayatycaga tgachcagwc tcc

23

<210> 87

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 87

catgccatga ctcgcggcgc gcct

24

<210> 88

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 88

gacattgtga tgactcaggc tac

23

<210> 89

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 89
catgccatga ctcgcggcgc gcct

24

<210> 90
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 90
carsytgtks tsactcagka at

22

<210> 91
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 91
catgccatga ctcgcggcgc gcct

24

<210> 92
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 92
carsytgtks tsactcagkc at

22

<210> 93
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 93
ctagtgttac tccacggccg gcccctg

27

<210> 94
<211> 20

<212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: synthetic, no
 natural origin

 <400> 94
 mrgagacdgt gasmgtrgtc 20

 <210> 95
 <211> 27
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: synthetic, no
 natural origin

 <400> 95
 ctagtggtac tccacggccg gccccctg 27

 <210> 96
 <211> 20
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: synthetic, no
 natural origin

 <400> 96
 mrgagacdgt gasrgtrgtg 20

 <210> 97
 <211> 27
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: synthetic, no
 natural origin

 <400> 97
 ctagtggtac tccacggccg gccccctg 27

 <210> 98
 <211> 20
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: synthetic, no
 natural origin

 <400> 98
 mrgagacdgt gascagrgtc 20

<210> 99
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 99
ctagtgtac tccacggccg gcccctg 27

<210> 100
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 100
mrgagacdgt gastgagggt 20

<210> 101
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 101
ctagtgtac tccacggccg gcccctg 27

<210> 102
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 102
mrgagacdgt gastgaratt 20

<210> 103
<211> 29
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic, no

natural origin

<400> 103
ctagtgggtac tccacgcggc cgcgtcgac 29

<210> 104
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 104
agcmcgtttc agytccaryt t 21

<210> 105
<211> 29
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 105
ctagtgggtac tccacgcggc cgcgtcgac 29

<210> 106
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 106
agcmcgtttk atytccaryt t 21

<210> 107
<211> 29
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 107
ctagtgggtac tccacgcggc cgcgtcgac 29

<210> 108
<211> 24
<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 108

agcmcgtttb akvtctatct ttgt

24

<210> 109

<211> 29

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 109

ctagtgggtac tccacgcggc cgcgtcgac

29

<210> 110

<211> 27

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 110

agcmcgagcm cgtttttatctt ccaamkt

27

<210> 111

<211> 29

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 111

ctagtgggtac tccacgcggc cgcgtcgac

29

<210> 112

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 112

ctgrcctagg acagtsasyt tggt

24

<210> 113
 <211> 257
 <212> PRT
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic, no natural origin

<400> 113

Met	Ala	Glu	Val	Gln	Leu	Gln	Gln	Ser	Gly	Ala	Glu	Leu	Val	Lys	Pro
1				5					10					15	
Gly	Ala	Ser	Val	Lys	Met	Ser	Cys	Lys	Ala	Ser	Gly	Tyr	Thr	Phe	Thr
			20					25					30		
Asn	Tyr	Asn	Met	His	Trp	Val	Lys	Gln	Thr	Pro	Gly	Gln	Gly	Leu	Glu
		35					40					45			
Trp	Ile	Gly	Ala	Ile	Tyr	Pro	Arg	Asn	Gly	Asp	Thr	Ser	Tyr	Asn	Gln
	50					55					60				
Lys	Phe	Lys	Gly	Lys	Ala	Thr	Leu	Thr	Ala	Asp	Lys	Ser	Ser	Ser	Thr
65					70					75					80
Ala	Tyr	Met	Gln	Leu	Ser	Ser	Leu	Thr	Ser	Glu	Asp	Ser	Ala	Val	Tyr
			85						90					95	
Tyr	Cys	Ala	Arg	Pro	Asp	Val	Trp	Gly	Ala	Gly	Thr	Leu	Leu	Thr	Val
		100						105					110		
Ser	Ala	Gly	Ala	Gly	Pro	Thr	Ser	Gly	Ser	Gly	Lys	Pro	Gly	Pro	Gly
	115						120					125			
Glu	Gly	Ser	Thr	Lys	Gly	Ala	Pro	Asp	Val	Leu	Met	Thr	Gln	Ala	Pro
	130					135					140				
Leu	Thr	Leu	Ser	Val	Thr	Ile	Gly	Gln	Pro	Ala	Ser	Ile	Ser	Cys	Lys
145					150					155					160
Ser	Ser	Gln	Ser	Leu	Leu	Asp	Gly	Asp	Gly	Lys	Thr	Tyr	Leu	Asn	Trp
			165					170						175	
Leu	Leu	Gln	Arg	Pro	Gly	Gln	Ser	Pro	Lys	Arg	Leu	Ile	Tyr	Leu	Val
		180						185					190		
Ser	Lys	Leu	Asp	Ser	Gly	Val	Pro	Asp	Arg	Phe	Thr	Gly	Ser	Gly	Ser
	195						200					205			
Gly	Thr	Asp	Phe	Thr	Leu	Lys	Ile	Ser	Arg	Val	Glu	Ala	Glu	Asp	Leu
	210					215					220				
Gly	Val	Tyr	Tyr	Cys	Trp	Gln	Gly	Thr	His	Phe	Pro	His	Thr	Phe	Gly
225					230					235					240
Gly	Gly	Thr	Lys	Leu	Glu	Ile	Lys	Arg	Ala	Arg	Ala	Val	Asp	Ala	Ala
			245					250					255		

Ala

<210> 114
 <211> 259
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: synthetic, no
 natural origin

<400> 114
 Met Ala Gln Val Thr Leu Lys Glu Ser Gly Pro Gly Ile Leu Lys Pro
 1 5 10 15
 Ser Gln Thr Leu Ser Leu Thr Cys Ser Phe Ser Gly Phe Ser Leu Ser
 20 25 30
 Thr Ser Gly Met Gly Val Gly Trp Ile Arg Gln Pro Ser Gly Lys Gly
 35 40 45
 Leu Glu Trp Leu Ala His Ile Trp Trp Asp Asp Asp Lys Tyr Tyr Asn
 50 55 60
 Pro Ser Leu Arg Ser Gln Leu Thr Ile Ser Lys Asp Thr Ser Arg Asn
 65 70 75 80
 Gln Val Phe Leu Arg Ile Thr Asn Val Asp Thr Ala Asp Thr Ala Thr
 85 90 95
 Tyr Tyr Cys Ala Arg Gly Tyr Tyr Gly Asn Asp Ser Pro Phe Ala Tyr
 100 105 110
 Trp Gly Gln Gly Thr Leu Leu Thr Val Ser Ser Gly Ala Gly Pro Thr
 115 120 125
 Ser Gly Ser Gly Lys Pro Gly Pro Gly Glu Gly Ser Thr Lys Gly Ala
 130 135 140
 Pro Asp Ile Val Leu Ser Gln Ser Pro Lys Phe Met Ser Thr Ser Val
 145 150 155 160
 Gly Asp Arg Val Ser Ile Thr Cys Lys Ala Ser Gln Ile Val Arg Thr
 165 170 175
 Ala Val Ala Trp Phe Gln Gln Lys Pro Gly Gln Ser Pro Lys Ala Leu
 180 185 190
 Ile Tyr Leu Ala Ser Asn Arg His Thr Gly Val Pro Asp Arg Phe Thr
 195 200 205
 Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Asn Val Gln
 210 215 220
 Ser Glu Asp Leu Ala Asp Tyr Phe Cys Leu Gln His Trp Asn Tyr Pro
 225 230 235 240
 Phe Thr Phe Gly Ser Gly Thr Lys Leu Glu Ile Lys Arg Ala Val Asp
 245 250 255

Ala Ala Ala

<210> 115
<211> 259
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 115
Met Ala Gln Ile Gln Leu Val Gln Ser Gly Pro Glu Leu Lys Lys Pro
1 5 10 15
Gly Gln Thr Val Lys Ile Ser Cys Lys Ala Ser Ala Tyr Thr Phe Thr
20 25 30
Asp Tyr Ser Met His Trp Val Lys Gln Ala Pro Gly Lys Gly Leu Lys
35 40 45
Trp Met Gly Trp Ile Asn Thr Glu Thr Gly Glu Pro Thr Tyr Ala Asp
50 55 60
Asp Phe Lys Gly Arg Phe Ala Phe Ser Leu Glu Thr Ser Ala Ser Thr
65 70 75 80
Ala Tyr Leu Gln Ile Asn Thr Leu Lys Asn Glu Asp Ser Ala Thr Tyr
85 90 95
Phe Cys Ala Arg Gly Ser Gly Phe Asn Pro Tyr Trp Gly Gln Gly Thr
100 105 110
Leu Val Thr Val Ser Ala Gly Ala Gly Pro Thr Ser Gly Ser Gly Lys
115 120 125
Pro Gly Pro Gly Glu Gly Ser Thr Lys Gly Ala Pro Asp Ile Val Leu
130 135 140
Ser Gln Ser Pro Ser Ser Leu Ala Val Ser Val Gly Glu Lys Val Thr
145 150 155 160
Met Ser Cys Lys Ser Ser Gln Ser Leu Leu Tyr Ser Ser Asn Gln Lys
165 170 175
Asn Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ser Pro Lys Leu
180 185 190
Leu Ile Tyr Trp Ala Ser Thr Arg Glu Ser Gly Val Pro Asp Arg Phe
195 200 205
Thr Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Asn Ser Val
210 215 220
Lys Ala Glu Asp Leu Ala Val Tyr Tyr Cys Gln Gln Tyr Tyr Ser Tyr
225 230 235 240
Val Thr Phe Gly Ala Gly Thr Lys Leu Glu Ile Lys Arg Ala Val Asp

Ala Ala Ala

<210> 116
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 116
Asn Leu Ile Val Glu Leu Ile Arg Gly Thr Gly Ser
1 5 10

<210> 117
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 117
Lys Thr Asp Leu Val Cys Arg Ala Thr
1 5

<210> 118
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 118
Arg Ile Val Ile Cys Gly Arg Val Thr
1 5

<210> 119
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 119
Arg Gly Thr Leu Pro Ala Arg Gly Thr
1 5

<210> 120
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 120
Val Gly Arg Gln Arg Asp Thr Gln Ser
1 5

<210> 121
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 121
Phe Leu Arg Val Asp Ala Arg Glu Thr
1 5

<210> 122
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 122
Val Ala Gly Met Leu Gly Lys Gly Thr
1 5

<210> 123
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 123

Arg Trp Glu Leu Ala Asn Arg Ser Thr
1 5

<210> 124
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 124
Pro Ser Ala Leu Gly Thr Arg Glu Thr
1 5

<210> 125
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 125
Lys Asn Asp Leu Val Ser Arg Ala Thr
1 5

<210> 126
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 126
Gln Ile Val Ser Ala Trp Arg Glu Thr
1 5

<210> 127
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 127
Cys Ala Leu Pro Ala Arg His Ile Gly Arg Cys

<210> 128
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 128
Cys Gln Leu Pro Ala Arg Ala Thr Ser Ser Cys
1 5 10

<210> 129
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 129
Cys Ile Thr Ser Gln Arg Glu Thr Gly Trp Cys
1 5 10

<210> 130
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 130
Cys Arg Arg Ser Thr Thr Gly Ile Cys
1 5

<210> 131
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 131
Cys Ser Thr Thr Leu Tyr Lys Arg Gly Thr Cys
1 5 10

<210> 132
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 132
Arg Val Asp Leu Pro Ala Arg Glu Thr
1 5

<210> 133
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 133
Lys His Ile Lys Asp Trp Glu His Leu Glu Glu Phe
1 5 10

<210> 134
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 134
Lys Arg Lys Asp Gly Glu His Trp Leu
1 5

<210> 135
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 135
Arg Gln Ala Lys Ser Trp Ser Ser Leu
1 5

<210> 136
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 136
Tyr Gln Ala Lys Glu Trp Ser Asn Leu
1 5

<210> 137
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 137
Lys Asp Trp Glu His Arg Val Pro Ser
1 5

<210> 138
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 138
Lys Asp Trp Glu His Leu
1 5

<210> 139
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 139
Lys Asp Trp Ser His Leu
1 5

<210> 140
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 140
Pro Lys Ser Asp Pro Gln Met Gly Lys Arg Arg Arg
1 5 10

<210> 141
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 141
His Pro Arg Pro Gln Leu Ala Ser Leu
1 5

<210> 142
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 142
His Pro Asp Pro Gln Ser Ser His Ser
1 5

<210> 143
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 143
Arg Phe Thr Asp Pro Gln Leu His Pro
1 5

<210> 144
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 144
Lys Gln Asp Pro Gln Gln Gln Lys Gln
1 5

<210> 145
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 145
Val Pro Asp Ser Gln Leu Glu Trp Pro
1 5

<210> 146
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 146
His Cys Asp Pro Gln Leu Tyr Gln Glu
1 5

<210> 147
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 147
Asp Pro Gln Met Phe Arg Arg His Cys
1 5

<210> 148

<211> 9
<212> PRT
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 148

Phe Lys Asp Gly Gln Leu Arg Pro Gln
1 5

<210> 149

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 149

Cys Pro Asp Pro Gln Leu Arg Leu His Arg Cys
1 5 10

<210> 150

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 150

Cys Pro Asp Pro Gln Leu Asn Gly Thr Arg Cys
1 5 10

<210> 151

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 151

Cys Pro Asp Pro Gln Leu Ser Ser Leu Arg Cys
1 5 10

<210> 152

<211> 11

<212> PRT
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 152

Cys Pro Asp Pro Gln Leu Arg Leu His Arg Cys
1 5 10

<210> 153

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 153

Cys Pro Asp Pro Gln Leu Thr Leu His Arg Cys
1 5 10

<210> 154

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 154

Cys Pro Asp Pro Gln Leu Ser Leu Gln Arg Cys
1 5 10

<210> 155

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 155

Cys Pro Asp Ala Gln Leu Ser Gly Thr Arg Cys
1 5 10

<210> 156

<211> 10

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 156

His Pro Asp Pro Gln Leu Ser Leu His Arg
1 5 10

<210> 157

<211> 42

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 157

gcggaattcg acgtcgccat gggctgggaa caactggagc ag 42

<210> 158

<211> 37

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 158

gcgaagcttg tcgaccggcg gtttgccggg ctggctg 37

<210> 159

<211> 45

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 159

gcggaattcg acgtcgccat ggccttcctc ggcgacggcg gcgac 45

<210> 160

<211> 37

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 160

<210> 161
 <211> 1136
 <212> DNA
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic, no natural origin

<400> 161

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 tcaagtgcag attttcagct tcctcctcat cagcgccctca gttatcatct ctaggggatc 120
 catgggctgg gaacaactgg agcagtgcgg ctatccggtg cagcggtgg tcgccctcta 180
 cctggcgggc cggctgtcgt ggaaccaggt cgaccaggtg atccgcaacg cctggccag 240
 cccggcgagc ggcggcgacc tgggcgaagc gatccgcgag cagccggagc aggcccgct 300
 ggccctgacc ctggccggcg ccgagagcga gcgcttcgtc cggcagggca ccggcaacga 360
 cgaggccggc gcggccaacg gcccggcgga cagcggcgac gccctgctgg agcgcaacta 420
 tccactggc gcggagtcc tcggcgacgg cggcgacgtc agcttcagca cccgcggcac 480
 gcagaactgg acggtggagc ggctgctcca ggcgcaaccg caactggagg agcgcggtta 540
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 ggtgcgcgcg cgcagccagg acctcgacgc gatctggcgc ggtttctata tcgccggcga 660
 tcggcgctg gcctacggct acgcccagga ccaggaaacc gacgcacgcg gccggatccg 720
 caacggtgcc ctgctgcggg tctatgtgcc gcgctcgagc ctgccgggct tctaccgcac 780
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 cccgcgcaac gtcggcgggc acctcgacgc gtccagcatc cccgacaagg aacaggcgat 1020
 cagcgccctg ccggactacg ccagccagcc cggcaaaccg ccggtcgacg gaggtggagg 1080
 ttctaacctc atcgttgaac ttatccgcgg taccggttct taaactcgag tctaga 1136

<210> 162
 <211> 827
 <212> DNA
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic, no natural origin

<400> 162

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 catggccttc ctggcgacg gcggcgacgt cagcttcagc acccgcgga cgcagaactg 180
 gacggtggag cggctgctcc aggcgcaccg ccaactggag gacgcggct atgtgttcgt 240
 cggctaccac ggcaccttc tcgaagcggc gcaagcatc gtcttcggcg ggggtgcgcgc 300
 gcgcagccag gaactcgacg cgatctggcg cggtttctat atcgccggcg atccggcgt 360
 ggctacggc tacgcccagg accaggaacc cgacgcacgc ggccggatcc gcaacgggtg 420
 cctgctgcgg gtctatgtgc cgcgctcgag cctgccgggc ttctaccgca ccagcctgac 480
 cctggccggc ccggaggcgg cgggcgaggt cgaacggctg atcgcccatc cgtgcccgt 540
 gcgcctggac gccatcaccg gcccgaggga ggaaggcggg cgccctggaga ccattctcgg 600
 ctggccgctg gccgagcgca ccgtggtgat tccctcggcg atccccaccg acccgcgcaa 660
 cgtcggcggc gacctcgacc cgtccagcat ccccgacaag gaacaggcga tcagcgccct 720
 gccggactac gccagccagc ccggcaaacc gccggtcgac ggaggtggag gttctaacct 780
 catcgttgaa cttatccgcy gtaccggttc ttaaactcga gtctaga 827

<210> 163

<211> 1046
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic, no
natural origin

<400> 163

INS
C18

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aattgtttctc	accaggtctc	cagcaatcat	gtctgcatct	ccaggggaga	aggtcaccat	180
gacctgcagt	gccagttcaa	gtgtaagtaa	aatgcaatgg	tatcagcaga	agtcaggcac	240
ctcccccaaa	agatggattt	atgaacacatc	caaactggcc	tctggagtcc	ctggtcgtt	300
cagtggcagt	gggtctggga	cctcttactc	tctcacaaatc	agcagcatgg	aggctgaaga	360
tgctgccact	tattactgcc	agcagtgag	tagtaaccgg	ctcacgttcg	gtgctgggac	420
caagctggag	ataaaaggct	ctactagtgg	ttccgggaag	agctctgaag	gtaaagggtga	480
ggtccagctg	cagcagttctg	gacctgagct	ggtaaattcct	ggggcttcag	tgaagatgtc	540
ctgcaaggcc	tctggataca	cattcattac	ctatgttatg	caactgggtga	agcagaagcc	600
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acaaaaactc	atctcagaag	aggatctgaa	tgctgtgggc	caggacacgc	aggaggtcat	900
cgtggtgcc	cactccttgc	cctttaaggt	ggtggtgatc	tcagccatcc	tggccctggg	960
ggtgctcacc	atcatctccc	ttatcatcct	catcatgctt	tggcagaaga	agccacgtta	1020
ggcggccgct	cgagcatgca	tctaga				1046